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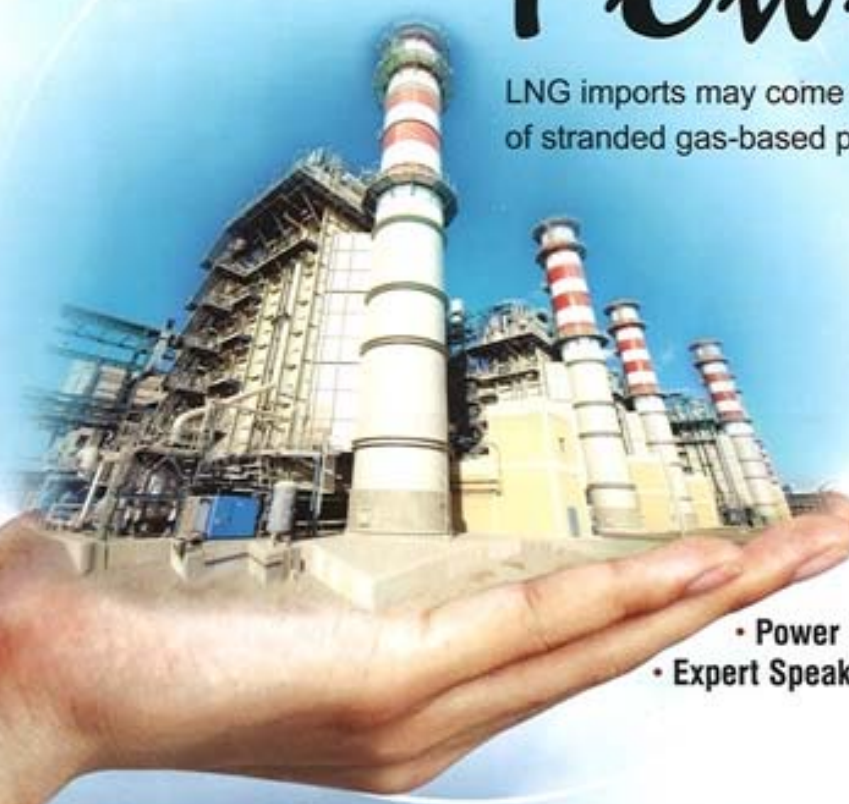
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September 2016 • Vol.9 • No.1

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Internet of Things (IoT) is the new buzzword that could impact the performance and efficiency of systems and processes. Developing a monitoring and diagnostics system over an IoT platform is nothing new for the automation industry as many major OEMs have already implemented the same. Though the initial implementations were focused on proprietary platforms and technologies, the focus has now shifted to open technologies.

Going through the efforts being spent on open source technologies, the industry focus will be mostly in the area of Cyber Physical Systems. In the electrical utility sector, IoT is widely used and similar concepts are already in place for specific applications. Advanced Metering Infrastructure (AMI), Demand Response (DR) and Phasor Data Concentrator (PDC) are some among the applications built upon IoT using industry specific protocols and integration techniques.

Monitoring and diagnostics or in a broader perspective asset performance management is slowly evolving in the transmission

& distribution (T&D) space. An effective asset performance management system requires integration of data from different systems, namely asset management, operations, work order management and maintenance management system, to get a holistic view of the asset.

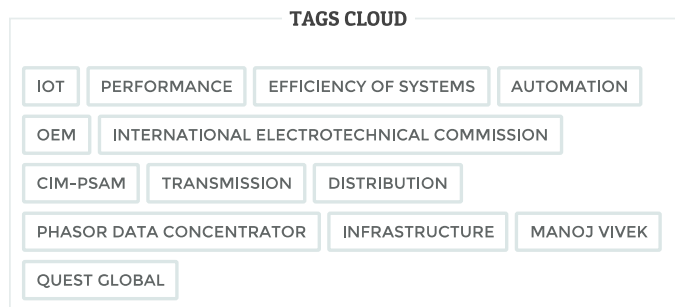
International Electrotechnical Commission (IEC) has already introduced Common Information Model û Power System Asset Management (CIM-PSAM), a model to augment power system that is capable of representing an integrated view of an asset. So, when we discuss ways of integrating an asset, it’s logical to use CIM-PSAM as the base data model.

In most scenarios, monitoring and diagnostic implementations stand out parallel to normal operations or data acquisition platforms used. Those implementations will have their own data acquisition devices, network components, integration platforms and analytical solutions. This is partly due to the fact that each use case requires hardware that supports high sampling rates and data transfer techniques for transferring huge chunk of data over a small period of time. There are some efforts in TC57 to see how IEC61850 standard can be used for condition monitoring of assets that would enable usage of a common infrastructure for operations and condition monitoring.

Strangely in T&D there seems to be a lot of such parallel implementations. AMI, DR and PDC mostly will all have similar implementations where they may not even share a single communication backbone. So the questions that arise here would be

- 1. Is it possible to have a common platform for all requirements in this space?
 - 2. Can we integrate AMI, DR, PDC, operations and asset performance management in a common infrastructure?
- This may take some time, but this will be something to look forward to.

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